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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,939	12/21/2000	Luc Francois Descamps	Q62126	7321

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EXAMINER

TRAN, QUOC DUC

ART UNIT	PAPER NUMBER
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2643

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DATE MAILED: 07/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,939

Applicant(s)

DESCAMPS ET AL.

Examiner

Quoc D. Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/740,939.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-2, 4-19, 21-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Banwell et al (WO 01/24482 A1).

Consider claim 1, Banwell et al teach a time domain reflectometry method for determining properties of a transmission channel, characterized in that it comprises the steps of generating, at one end of the channel, a plurality of pulses (40, 42, 44) covering different frequency bands, and of processing the echoes provided by these pulses at the same end (12) of the channel (Pg. 37 line 8 – Pg. 38 line 9).

Consider claim 2, Banwell et al teach a method characterized in that the frequency bands of the generated pulses are overlapping (Pg. 25 lines 8-9).

Consider claim 4, Banwell et al teach a method characterized in that each generated pulse is provided with a given amplification (48) or attenuation and the received pulses are provided with the corresponding attenuation (50) or amplification (Pg. 37 lines 19-26).

Consider claim 5, Banwell et al teach a method characterized in that the signals received are subjected to a synchronous averaging (52) (Pg. 38 lines 1-5).

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Consider claim 6, Banwell et al teach a method characterized in that the received signals are subjected to a matched filtering (54) (Pg. 38 lines 1-5).

Consider claim 7, Banwell et al teach a method characterized in that the received signals are subjected, at least for the medium and high frequency pulses, to a noise suppressing step (56) comprising the estimation of the noise fog the part of the received signal after the channel end echo and the determination of a threshold above which the signals are taken into consideration (Pg. 35 lines 1-5, Pg. 38 lines 1-7).

Consider claim 8, Banwell teach a method characterized in that the received signals are processed in their own frequency bands and added (60) after processing (see Fig. 22).

Consider claim 9, Banwell et al teach a method characterized in that the variation with time of the modulus of the received signals is detected and/or the variation with time of the frequency of the received signals is detected (Pg. 25 lines 20-23).

Consider claim 10, Banwell et al teach a method characterized in that the pulses are complex analytical pulses (Pg. 25 lines 9-14).

Consider claim 11, Banwell et al teach a method characterized in that the frequency bandwidth and the amplitude of the low frequency pulses (40) are selected according to the channel attenuation and its compliancy in terms of egress (Pg. 25 lines 8-14, Pg. 39 lines 15-20).

Consider claim 12, Banwell et al teach a method characterized in that the pulses are generated sequentially or simultaneously (Pg. 25 lines 8-11).

Consider claim 13, Banwell et al teach a method wherein at least one of said properties being determined comprises the locations of defects of the channel (Pg. 42 line 20 – Pg. 43 line 2).

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Consider claim 14, Banwell et al teach a method wherein said transmission channel comprises a telephone line between a central office (12) and a subscriber (14), the measurement being made at the central office (see Fig. 22).

Consider claim 15, Banwell et al teach a method for testing the properties of transmission channels between a central office and a subscriber, characterized in that it comprises using the time domain reflectometry to test said properties (see Fig. 22, Pg. 37 line 8 – Pg. 38 line 9).

Consider claim 30, Banwell et al teach a method wherein said transmission channels are telephone lines comprising copper pairs between a central office and a subscriber characterized in that it comprises using the time domain reflectometry to test said properties (Fig. 22).

Consider claim 16, Banwell et al teach a method characterized in that the time domain reflectometry step comprises the steps of generating, at one end of the channel, a plurality of pulses (40, 42, 44) covering different frequency bands, and detecting echoes provided by these pulses at the same end (12) of the line (Pg. 37 line 8 – Pg. 38 line 9).

Consider claim 17, Banwell et al teach an apparatus for testing the properties of transmission channels between a central office and a subscriber, characterized in that it comprises time domain reflectometry test circuit (Pg. 36 lines 7-18).

Consider claim 31, Banwell et al teach an apparatus wherein said transmission channels are telephone lines comprising copper pairs between a central office and a subscriber, characterized in that it comprises time domain reflectometry test circuit (Fig. 22).

Consider claim 18, Banwell et al teach an apparatus characterized in that said time reflectometry test circuit comprises a pulse generator generating a plurality of pulses at one end of the line covering different frequency bands, and an echo processor processing the echoes provided by these pulses at the same end (12) of the channel (Pg. 37 line 8 – Pg. 38 line 9).

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Consider claim 19, Banwell et al teach an apparatus characterized in that the different frequency bands are overlapping (Pg. 25 lines 8-9).

Consider claim 21, Banwell et al teach an apparatus characterized in that the pulse generator includes, amplification or attenuation for each generated pulse and in that said apparatus includes complementary attenuation or amplification for each received pulse (Pg. 37 lines 19-26).

Consider claim 22, Banwell et al teach an apparatus characterized in that it comprises a synchronous averager for the received signals (Pg. 38 lines 1-5).

Consider claim 23, Banwell et al teach an apparatus characterized in that it comprises a matched filter for the received signals (Pg. 38 lines 1-5).

Consider claim 24, Banwell et al teach an apparatus characterized in that it comprises a noise suppressor for the received signals, the noise including an estimator estimating the noise for part of the received signals after the channel end echo and threshold circuit determining a threshold above which the signals are taken into consideration (Pg. 35 lines 1-5, Pg. 38 lines 1-7).

Consider claim 25, Banwell et al teach an apparatus characterized in that it comprises a processor processing the received signals for each frequency band and an adder adding the processed signals (see Fig. 22).

Consider claim 26, Banwell et al teach an apparatus characterized in that it comprises a detector detecting the modulus of the received signals and/or the variation with time of the frequency of the received signals (Pg. 25 lines 20-23).

Consider claim 27, Banwell et al teach an apparatus characterized in that it comprises a receiver receiving complex analytical pulses (Pg. 25 lines 9-14).

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Consider claim 28, Banwell et al teach an apparatus characterized in that it comprises a selector selecting the frequency bandwidth and the amplitude of the low frequency pulses according to the line attenuation and its compliancy in terms of egress (Pg. 25 lines 8-14, Pg. 39 lines 15-20).

Consider claim 29, Banwell et al teach an apparatus characterized in that said pulse generator generates the pulses sequentially or simultaneously (Pg. 25 lines 8-11).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banwell et al (WO 01/24482 A1).

Consider claims 3 and 20, Banwell et al did not suggest the method and apparatus characterized in that the overlapping of the frequency bands is such that, after reflection and processing, the frequency spectrum is practically flat. However, it is obvious to one of the ordinary skill in the art to recognize that the frequency spectrum is flat after being processed. Since noises and interferences are being removed or rejected from the resulting signal. Thus the result signal will therefore be flat.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quoc Tran whose telephone number is (703) 306-5643. The examiner can normally be reached on Monday-Friday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

June 20, 2002


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600